

## **REMARKS**

This Amendment is submitted in response to the Office Action dated October 2, 2006, having a shortened statutory period set to expire January 2, 2007.

### **OBJECTION TO THE DRAWINGS**

In paragraph 2 of the present Office Action, the drawings are objected to under 37 C.F.R. § 1.83(a) for failing to illustrate details described in the specification. In response, Applicant has proposed amendments to Figures 1 and 2 indicated in the attached replacement drawing sheet in order to clearly illustrate all features necessary for an understanding of the present invention. The proposed amendments to the drawings do not contain any new matter.

### **CLAIM REJECTIONS UNDER 35 U.S.C. § 101**

In paragraph 3 of the present Office Action, Claims 1-22 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter for allegedly failing the "practical application requirement". That rejection is respectfully traversed.

In the examination guidelines set forth in MPEP 2107.01, the Examiner is instructed as follows:

(B) Review the claims and the supporting written description to determine if the applicant has asserted for the claimed invention any specific and substantial utility that is credible:

(1) If the applicant has asserted that the claimed invention is useful for any particular practical purpose (i.e., it has a "specific and substantial utility") and the assertion would be considered credible by a person of ordinary skill in the art, do not impose a rejection based on lack of utility.

...  
(ii) Credibility is assessed from the perspective of one of ordinary skill in the art in view of the disclosure and any other evidence of record (e.g., test data, affidavits or declarations from experts in the art, patents or printed publications) that is probative of the applicant's assertions. An applicant need only provide one credible assertion of specific and substantial utility for each claimed invention to satisfy the utility requirement.

In accordance with the above section of the MPEP, Applicant must only make one credible assertion of utility of each claimed invention to avoid a rejection under 35 U.S.C. § 101.

In the present case, Applicant's specification is replete with credible assertions of the utility of the claimed invention. For example, page 3, line 30 *et seq.* of the present specification disclose that the invention is directed to "a system and method for designing a communication link that is optimized for a given customer's communication channel and application." Clearly a system and method for designing a communication link has a practical application, namely, the design of an optimized communication link. Page 4, line 16 *et seq.* of the present specification further disclose, "The customer can operate the system in various modes of operation." Thus, further utility is asserted in that a provider can allow the customer to operate the disclosed system as a service.

Page 6, line 25 *et seq.* of the present specification further disclose:

The invention may be implemented as a tool that is provided to a customer to enable the customer to evaluate various communication link designs. In such embodiments, portions of the invention may be implemented as a set of sequence of computer executable instructions (software) stored on a computer readable medium such as disk storage or the like. In other embodiment, the invention includes the actual communication link or a set of generic link block models that are used in conjunction with the link's design.

Thus, the present specification teaches a specific useful embodiment of the invention (i.e., a software tool), as well as a "useful, concrete, and tangible result", namely, an "actual communication link or set of generic link block models". Useful, concrete and tangible results of the operation of the method and system of the present invention are further described at col. 12, line 1 *et seq.* of the present specification, which disclose the presentation within a graphical user interface of the bit error rate, power consumption, and area of a communication link design.

Because the present specification explicitly asserts a practical application for the present invention, namely, the design of a communication link, and further discloses useful, concrete, and tangible results (e.g., a GUI presentation of characteristics of a communication link having

given design parameters and/or an actual communication link), Applicant respectfully submits that the rejection under 35 U.S.C. § 101 is not well founded and should be withdrawn.

In response to the further rejection of Claims 19-22 as failing to fall within one of the four statutory classes of inventions set forth in 35 U.S.C. § 101, Applicant has amended each of Claims 19-22 to recite a “method of providing a service,” thereby clearly stating the claimed subject matter in terms of one of the four statutory classes.

### **CLAIM REJECTIONS UNDER 35 U.S.C. § 103**

In paragraph 4 of the present Office Action, Claims 1-22 are rejected under 35 U.S.C. 103(a) as unpatentable over the doctoral dissertation of Andrea Jo Goldsmith (*Goldsmith*) in view of U.S. Patent No. 7,093,172 to *Fan et al* (*Fan*).

Exemplary Claim 1 is not rendered unpatentable by the combination of *Goldsmith* and *Fan* because that combination of references does not teach or suggest each of the individual features nor the combination of features recited in exemplary Claim 1. For example, the combination of *Goldsmith* and *Fan* does not teach or suggest the “parameter generator” set forth in exemplary Claim 1 as follows:

a parameter generator configured to permit a user to specify a first set of parameters associated with the communication link and further configured to derive a set of internal parameters associated with the communication link from the first set of parameters.

With reference to the claimed “parameter generator”, paragraph 4.1 of the present Office Action cites pages 44-50 of *Goldsmith* without any more specific reference to this large section of cited text. Because such indefinite citations are made throughout the present Office Action, Applicant respectfully requests that in future actions the Examiner comply with 37 C.F.R. § 1.104(c)(2), which states in relevant part:

When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained. (emphasis supplied)

Turning now to the cited portion of *Goldsmith*, Applicant notes that Section 3.2 discloses the use of a system model for an impulse response channel “to determine the optimal input spectrum for the time-varying impulse response channel.” At page 46 *et seq.*, the optimal input spectrum is interpreted using a “water-filling analogy.” Next, Section 3.3 of *Goldsmith* discloses a system model for use when “the transmitted signal is narrowband” (p. 47, paragraph 2). The narrowband signal model of Section 3.3 adapts transmit the power, data rate and coding scheme relative to channel variations (p. 50, paragraph 1). Page 50 of *Goldsmith* finally discloses “two policies which adapt only the transmit power to maintain a constant SNR at the receiver.”

After a detailed review of the cited portion of *Goldsmith*, Applicant respectfully submits that the cited portion of *Goldsmith* does not teach or suggest the claimed “parameter generator configured to permit a user to specify a first set of parameters associated with the communication link and further configured to derive a set of internal parameters associated with the communication link from the first set of parameters.”

Paragraph 4.1 of the present Office Action further implies that the Examiner also relies upon *Fan*’s Pseudo Random Bit Stream (PRBS) generator 225a as teaching the claimed parameter generator. However, PRBS 225a, which is described, for example, at col. 9, line 53 *et seq.* of *Fan*, merely generates a pseudo random bit stream. *Fan* provides no teaching or suggestion that PRBS 225a is “configured to permit a user to specify a first set of parameters associated with the communication link and further configured to derive a set of internal parameters associated with the communication link from the first set of parameters,” as explicitly set forth in exemplary Claim 1.

Because the combination of *Goldsmith* and *Fan* does not disclose each claimed feature and, in particular, does not teach or suggest the claimed parameter generator, Applicant respectfully submits that the cited combination of references does not render exemplary Claim 1 unpatentable under 35 U.S.C. § 103.

Applicant further submits that the rejection of exemplary Claim 1 is overcome because the cited combination of *Goldsmith* and *Fan* does not disclose the “internal link model” set forth in Claim 1 as follows:

an internal link model comprising a set of configurable link cells, wherein the internal link model is configured to receive the derived set of internal parameters and to instantiate each link cell in the set of configurable link cells based on the set of internal parameters.

With respect to the claimed “internal link model”, paragraph 4.1 of the present Office Action again generally cites pages 44-50 of *Goldsmith*, which are discussed above.

While Applicant notes that the cited portion of *Goldsmith* does disclose various system models in which a communication channel couples a transmitter and a receiver (see, e.g., *Goldsmith*, Figures 3.3, 3.8 and 3.10), the cited portion of *Goldsmith* does not disclose “an internal link model comprising a set of configurable link cells” as claimed. Further, the cited portion of *Goldsmith* does not disclose an internal link model that “is configured to receive the derived set of internal parameters and to instantiate each link cell ... based on the set of internal parameters” as claimed. Consequently, the rejection of exemplary Claim 1 in view of the combination of *Goldsmith* and *Fan* is overcome.

The foregoing remarks made with respect to exemplary Claim 1 are also believed to overcome the rejections of Claims 2-9, which depend therefrom, as well as similar independent Claims 10 and 19 and their respective dependent claims.

## **CONCLUSION**

Having now responded to each objection and rejection set forth in the present Office Action, Applicant believes all pending claims are now in condition for allowance and respectfully requests such allowance.

Applicant submits herewith the fee for a one-month extension of time. No additional fee is believed to be required. If, however, any additional fees are required, please charge those fees to IBM Corporation Deposit Account No. **09-0447**.

Respectfully submitted,

  
Brian F. Russell  
Brian F. Russell  
*Registration No. 40,796*  
DILLON & YUDELL LLP  
8911 N. Capital of Texas Hwy., Ste. 2110  
Austin, Texas 78759  
(512) 343-6116

ATTORNEY FOR APPLICANT